

Claim Amendments

Please amend claims 1 and 11-32 as follows:

1. (currently amended) ~~A method for adaptively controlling level of a receiver buffer in a client in a multimedia streaming network, the streaming network comprising a server for providing streaming data to the client, wherein the receiver buffer is used to compensate for difference between data transmission amount by the server and data usage amount by the client so as to allow the client to have sufficient amount of streaming data to play out in a non-disruptive manner, said method comprising:~~

defining in [[the]] a client in a multimedia streaming network at least one parameter for determining a rate adaptation operating range, wherein the streaming network comprises a server configured for providing streaming data to the client, the client having a receiver buffer for storing at least part of the streaming data to compensate for a difference between data transmission amount by the server and usage amount of the streaming data by the client so as to allow the client to have sufficient amount of streaming data to play out in a non-disruptive manner, and wherein the rate adaption operating range is used for ~~so as to carry out rate adaptation between the server and the client;~~

providing to the server information indicative of said at least one parameter;

adapting in the server the data amount to a reception rate based on said at least one parameter; and

adjusting in the client packet transfer delay variation based on said adapting.

2. (original) The method of claim 1, wherein said at least one parameter comprises a minimum shift amount indicative of a difference between a sampling time and a transmission time of a packet at the server so as to allow the server to carry out said adapting based on the minimum shift amount.

3. (original) The method of claim 1, wherein said at least one parameter comprises a target shift amount indicative of a shift amount greater than a difference between a sampling time and a transmission time of a packet at the server so as to allow the server to carry out said adapting based on the target shift amount.

4. (original) The method of claim 1, wherein said at least one parameter comprises a number specifying a maximum difference between the number of bytes that has been sent and the number of bytes that have been sampled so as to allow the server to carry out said adapting based on the number.
5. (original) The method of claim 1, further comprising ~~the step of~~ adapting a sampling rate to the transmission rate in the server based on said at least one parameter.
6. (original) The method of claim 1, wherein said at least one parameter comprises a clock shift amount for preventing playout disruption in the client.
7. (original) The method of claim 1, wherein said adapting comprises an adjustment of a transmission rate.
8. (original) The method of claim 1, wherein said adapting comprises an adjustment of a sampling rate.
9. (original) The method of claim 1, wherein said adapting comprises an adjustment of both a transmission rate and a sampling rate.
10. (original) The method of claim 1, wherein said at least one parameter comprises:
 - a minimum shift amount indicative of a difference between a sampling time and a transmission time of a packet at the server;
 - a target shift amount indicative of a shift amount greater than a difference between a sampling time and a transmission time of a packet at the server;
 - a number specifying a maximum difference between the number of bytes that has been sent and the number of bytes that have been sampled; and
 - a clock shift amount, and wherein two or more of the minimum shift amount, the target shift amount, the specifying number and the clock are sent together to the server.

11. (currently amended) A multimedia streaming ~~system~~ network comprising:

at least a client; and

a server for providing streaming data to the client, the client having a receiver buffer to compensate for a difference between data transmission amount by the server and data usage amount by the client so as to allow the client to have sufficient amount of streaming data to play-out in a non-disruptive manner, wherein the client comprises:

a mechanism for defining at least one parameter for determining a rate adaptation operating range, and for providing information indicative of said at least one parameter to the server so as to allow the server to adapt the data amount to a reception rate based on said at least one parameter; and

a mechanism to adjust a packet transfer delay variation based on said adapting.

12. (currently amended) The multimedia streaming ~~system~~ network of claim 11, wherein said at least one parameter comprises a minimum shift amount indicative of a difference between a sampling time and a transmission time of a packet at the server so as to allow at the server to carry out said adapting.

13. (currently amended) The multimedia streaming ~~system~~ network of claim 11, wherein said at least one parameter comprises a target shift amount indicative of a shift amount greater than a difference between a sampling time and a transmission time of a packet at the server so as to allow the server to carry out said adapting.

14. (currently amended) The multimedia streaming ~~system~~ network of claim 11, wherein said at least one parameter comprises a number specifying a maximum difference between the number of bytes that has been sent and the number of bytes that have been sampled so as to allow the server to carry out said adapting.

15. (currently amended) The multimedia streaming ~~system~~ network of claim 11, wherein the server comprises an adapting mechanism for adapting a sampling rate to the transmission rate based on said at least one parameter.

16. (currently amended) The multimedia streaming ~~system~~ network of claim 11, wherein said at least one parameter comprises a clock shift amount for preventing playout disruption in the client.

17. (currently amended) The multimedia streaming ~~system~~ network of claim 11, wherein the server comprises an adapting mechanism for adjusting a transmission rate.

18. (currently amended) The multimedia streaming ~~system~~ network of claim 11, wherein the server comprises an adapting mechanism for adjusting a sampling rate.

19. (currently amended) The multimedia streaming ~~system~~ network of claim 11, wherein the server comprises an adapting mechanism for adjusting both a transmission rate and a sampling rate.

20. (currently amended) The multimedia streaming ~~system~~ network of claim 11, wherein the server comprises a software program having at least a code for carrying out said adapting.

21. (currently amended) A computer readable medium embedded with a software program ~~application product embodied in a computer-readable storage medium having a software application for use in a client in a multimedia streaming network for adaptively controlling level of a receiver buffer in the client, the multimedia streaming network comprising a server capable for providing streaming data to the client, wherein the receiver buffer is used to compensate for difference between data transmission amount by the server and data usage amount by the client so as to allow the client to have sufficient amount of streaming data to play out in a non-disruptive manner, said software application comprising:~~

[[a]] programming code for defining in a client in a multimedia network at least one parameter for determining a rate adaptation operation range, wherein the streaming network comprises a server configured for providing streaming data to the client, the client having a receiver buffer for storing at least part of the streaming data to compensate for a difference between data transmission amount by the server and usage amount of the streaming data by the client so as to allow the client to have sufficient amount of streaming data to play out in a non-

disruptive manner, where information indicative to said at least one parameter is provided to the server so as to allow that determines a rate adaptation operating range in the server so as to carry out rate adaptation between the server and the client based on said at least one parameter; and

[[a]] programming code for adjusting a packet transfer delay variation in the client for the rate adaptation based on said adapting.

22. (currently amended) The computer readable medium ~~software application product~~ of claim 21, wherein said at least one parameter comprises a minimum shift amount indicative of a difference between a sampling time and a transmission time of a packet at the server so as to allow at the server to carry out said rate adaptation.

23. (currently amended) The computer readable medium ~~software application product~~ of claim 21, wherein said at least one parameter comprises a target shift amount indicative of a shift amount greater than a difference between a sampling time and a transmission time of a packet at the server so as to allow the server to carry out said rate adaptation.

24. (currently amended) The computer readable medium ~~software application product~~ of claim 21, wherein said at least one parameter comprises a number specifying a maximum difference between the number of bytes that have been sent and the number of bytes that have been sampled so as to allow the server to carry out said rate adaptation.

25. (currently amended) The computer readable medium ~~software application product~~ of claim 21, wherein said at least one parameter comprises a clock shift amount for preventing playout disruption in the client.

26. (currently amended) An apparatus ~~A terminal in a multimedia streaming network having at least a server for providing streaming data to the terminal, the terminal having a receiver buffer to compensate for difference between data transmission amount by the server and data usage amount by the terminal so as to allow the terminal to have sufficient amount of streaming data to play out in a non-disruptive manner, said terminal comprising:~~

a buffer for storing at least part of streaming data provided by a server in a multimedia streaming network to compensate for a difference between data transmission amount by the server and the data usage amount in the apparatus so that sufficient amount of the streaming data can be played out in a non-disruptive manner;

a mechanism for defining at least one parameter that determines a rate adaptation operating range in the server so as to allow the server to adapt the data transmission amount to a reception rate based on said at least one parameter; and

a mechanism for adjusting a packet transfer delay variation based on said adapting.

27. (currently amended) The ~~terminal~~ apparatus of claim 26, wherein said defining mechanism comprises a software program having at least a code for defining said at least one parameter.

28. (currently amended) The ~~terminal~~ apparatus of claim 26, wherein said adjusting mechanism comprises a software program having at least a code for adjusting the packet transfer delay variation.

29. (currently amended) The ~~terminal~~ apparatus of claim 26, wherein said at least one parameter comprises a minimum shift amount indicative of a difference between a sampling time and a transmission time of a packet at the server so as to allow the server to carry out said adapting based on the minimum shift amount.

30. (currently amended) The ~~terminal~~ apparatus of claim 26, wherein said at least one parameter comprises a target shift amount indicative of a shift amount greater than a difference between a sampling time and a transmission time of a packet at the server so as to allow the server to carry out said adapting based on the target shift amount.

31. (currently amended) The ~~terminal~~ apparatus of claim 26, wherein said at least one parameter comprises a number specifying a maximum difference between the number of bytes that have been sent and the number of bytes that have been sampled so as to allow the server to carry out said adapting based on the number.

32. (currently amended) A network element in the multimedia streaming network ~~having a least a terminal that receives streaming data from the network element, the terminal having a receiver buffer to compensate for difference between data transmission amount by the network element and data usage amount by the terminal so as to allow the terminal to have sufficient amount of streaming data to play out in a non-disruptive manner~~, said network element comprising:

means a receiving module for receiving a request from a client have a buffer for storing at least part of streaming data provided by the network element to compensate for a difference between data transmission amount by the network element and data usage amount by the client so that the client has sufficient amount of streaming data to play out in a non-disruptive manner ~~the terminal~~, the request indicative of at least one parameter that determines a rate adaptation operating range in the network element; and

a mechanism for adapting, based on said at least one parameter, the data transmission amount to a reception rate by the terminal, so as to allow the terminal to adjust a packet transfer delay variation based on said adapting.

33. (original) The network element of claim 32, wherein said adapting mechanism comprises a software program having at least a code for adapting the data transmission amount.

34. (original) The network element of claim 33, wherein the software program comprises a code for adjusting the transmission rate.

35. (original) The network element of claim 33, wherein the software program comprises a code for adjusting a sampling rate.

36. (original) The network element of claim 33, wherein the software program comprises a code for adjusting of both a transmission rate and a sampling rate.